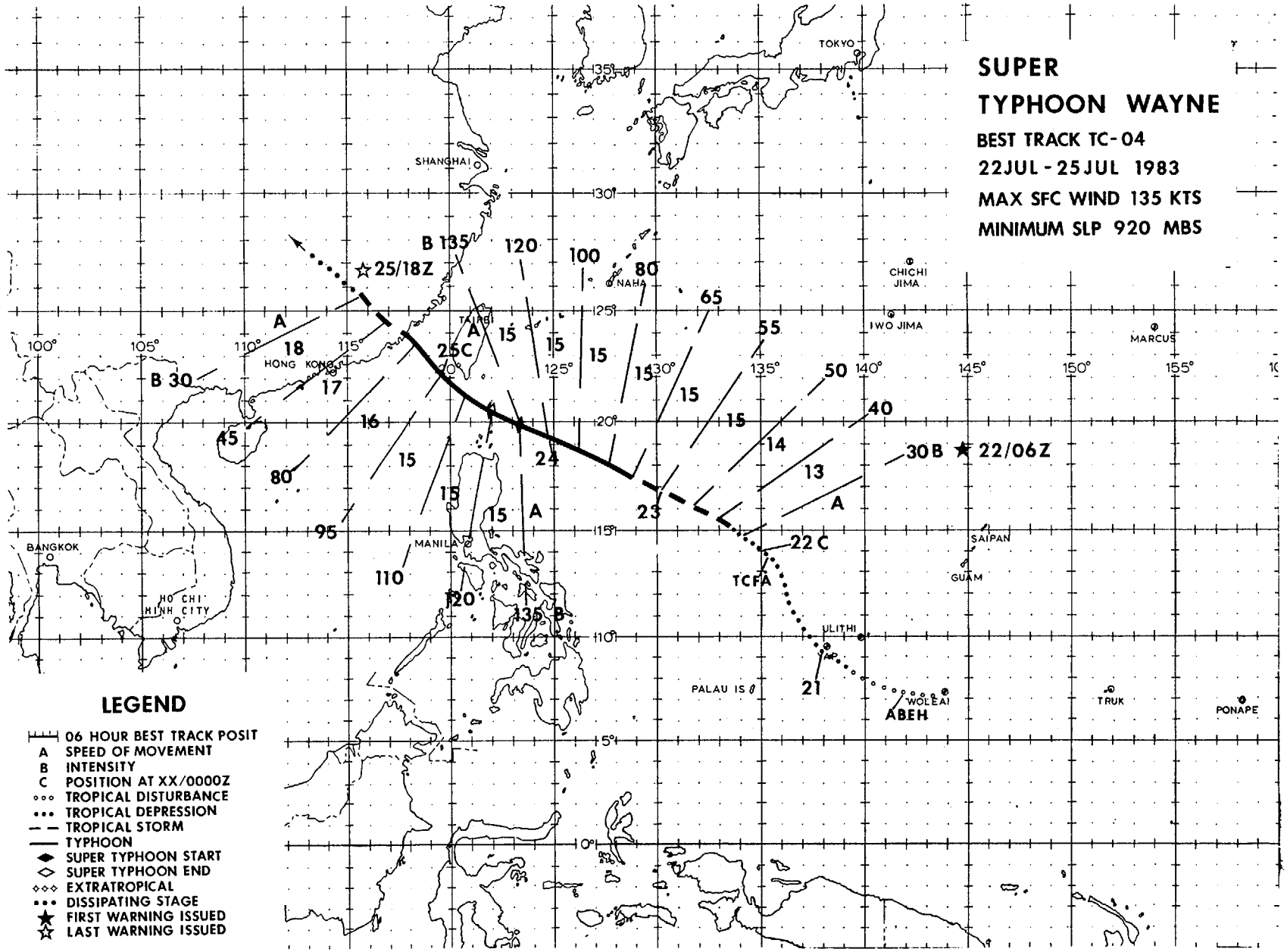
SUPER
TYPHOON WAYNE
BEST TRACK TC-04
22JUL - 25JUL 1983
MAX SFC WIND 135 KTS
MINIMUM SLP 920 MBS
TOKYO
SHANGHAI
NAHA
CHICHI JIMA
IWO JIMA
MARCUS
HONG KONG
TAIPEI
BANGKOK
MANILA
HO CHI MINH CITY
SAIPAN
GUAM
ULITHI
WOLEAI
ABEH
TRUK
PONAPE
PALAU IS
TCFA
☆25/18Z
★ 22/06Z
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED

Cyclogenesis of Super Typhoon Wayne began in an elongated east-west surface trough west of Truk (WMO 91334). Initial satellite imagery on 19 July at 1200Z indicated a widespread area of poorly organized convective activity supported by a weak upper-level anticyclone. This area remained poorly developed until 1200Z on the 21st when satellite imagery indicated the development of an upper trough northwest of the system (Figure 3-04-1). This served to support the development of the upper-level anticyclone. Subsequent satellite imagery indicated an increase in the organization and convective activity of the system. Based on this evidence and the potential for further development, a TCFA was issued at 212130Z. Initial aircraft reconnaissance at 220457Z revealed a weak tropical depression with an MSLP of 1005 mb and maximum surface winds of 25 kt (13 m/s). The first warning on Wayne was issued shortly thereafter at 220630Z.

During the next 24 hours, Wayne more than doubled in intensity to 65 kt (32 m/s) and began to track northwestward at 15 kt (26 km/hr). Aircraft reconnaissance at 230830Z reported very high 700 mb heights just prior to entering the eyewall of Wayne, followed by an extremely sharp pressure gradient on penetration to the center of the system. Wayne continued to intensify rapidly, again doubling in intensity over a 24 hour period as it moved westward along the southern periphery of the subtropical ridge. Maximum intensity of 135 kt (67 m/s) occurred at 240600Z only two days after the first warning on the system as a 25 kt (13 m/s) tropical depression.

Wayne's rapid intensification is evident in Figure 3-04-2. Note the generally good agreement between Dvorak intensity estimates and those from reconnaissance aircraft. Figure 3-04-3 shows Wayne near maximum intensity with a wall-developed anticyclone and gravity waves evident in the cloud features near the eye.

Figure 3-04-1. Overlay of 200 mb analysis with satellite imagery during early stages of development of Super Typhoon Wayne (212039Z July DMSP infrared imagery).

As Super Typhoon Wayne passed north of Luzon, the low-level surface flow was disrupted north of the storm by the topography of Taiwan, setting up a leeside trough in the Formosa Straits. Wayne responded to this trough, taking a more northward track and making landfall approximately 300 nm (556 km) east of Hong Kong (WMO 45005). Wayne struck the coast of China with typhoon strength, but rapidly dissipated as it moved inland over the mountainous terrain of southeastern China.

JTWC was successful in forecasting Wayne's track westward, but encountered problems forecasting speed of movement, which averaged 15 kt (26 km/hr), and intensity, which went from 25 kt (13 m/s) to 135 kt (67 m/s) in just 48 hours. Wayne's rapid intensification was a product of the supportive upper-level conditions which existed throughout its lifetime. Wayne's initial favorable position with respect to upper-level features (5-7 degrees southeast of a TUTT cell), was maintained throughout its westward track resulting in the development of well defined outflow channels to the northeast and southwest.

Although Wayne did not make landfall in the Philippines, high winds and torrential rainfall associated with its peripheral circulation brough destruction to areas far removed from the center. At least twenty people were killed and more than one hundred were reported missing when a bridge collapsed 300 nm (556 km) southeast of Manila (WMO 98426).

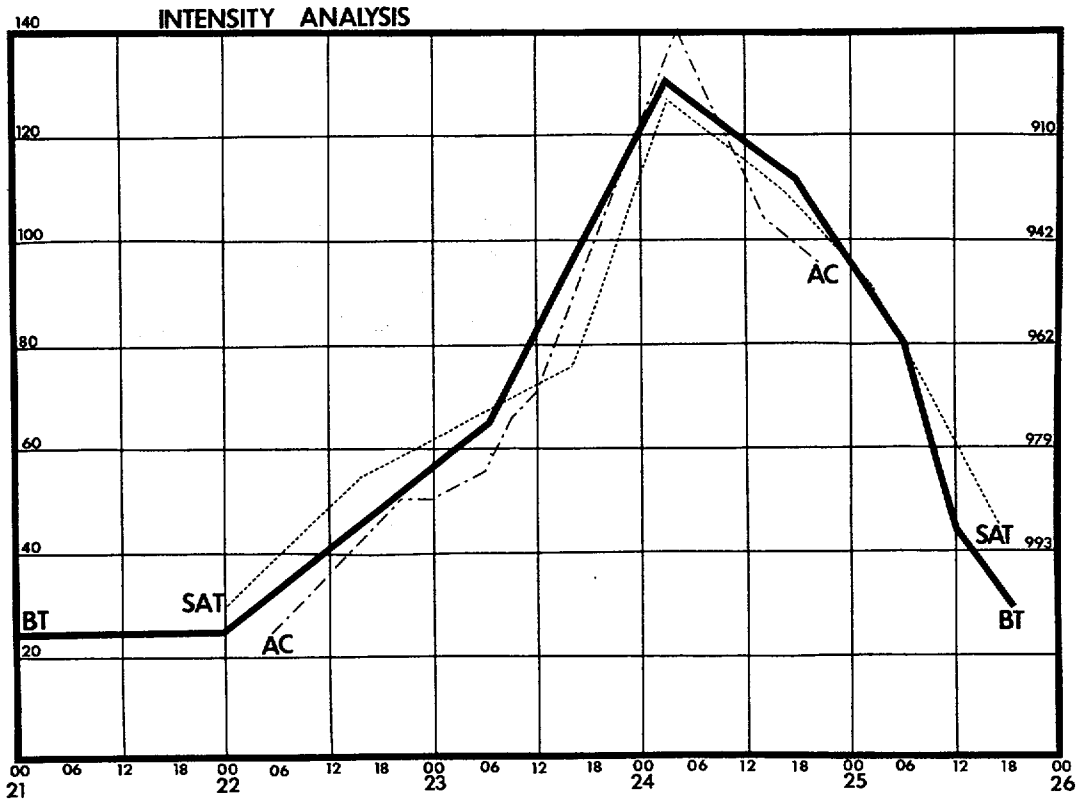

Figure 3-04-2. Satellite intensity estimates (Dvorak, 1973) and intensities measured by reconnaissance aircraft. Best track intensities are represented as a continuous line.

Figure 3-04-3. Super Typhoon Wayne at maximum intensity - 135 kt (67 m/s).